

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/029083

International filing date (day/month/year)
08.09.2004

Priority date (day/month/year)
10.09.2003

International Patent Classification (IPC) or both national classification and IPC
G06F9/45

Applicant
INTEL CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-30
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/029083

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- 1.1 The following document is referred to in this communication:
D1: "Profile Guided Selection of ARM and Thumb Instructions", Arvind Krishnaswamy and Rajiv Gupta, SIGPLAN Notices 37(2), July 2002, XP002309544.
- 1.2 This document deals with the compilation of programs for the ARM processor, which is the field of the current application. It is thus known to the person skilled in the art.

Inventive step

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.
- 2.2 Document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document, the wording of the claim being in *italics*, and the ~~struck-out~~ text being not disclosed subject-matter):
A method of executing a non-native software instruction, the method comprising:
~~receiving the non-native software instruction at a device;~~
generating a first native software instruction from a first instruction set based on the non-native software instruction, the generation of the first native software instruction occurring at the device (page 58, right column, paragraphs 4 and 5);
executing the first native software instruction at the device (page 60, left column, paragraph 1);
generating a second native software instruction from a second instruction set based on the non-native software instruction, the generation of the second native software instruction occurring at the device (page 58, right column, paragraphs 4 and 5); and
executing the second native software instruction at the device (page 60, left column, paragraph 1).
- 2.3 For the analysis of document D1, instructions and functions are considered

equivalent as a function is a set of instructions and that the difference does not cause any non expected technical effect in the method as disclosed in claim 1, and that the person skilled in the art would regard it as a normal procedure to adapt the method disclosed in document D1 that deals with functions to single instructions. It is just a matter of granularity, and moreover the applicant himself considers them equivalent, see the description starting page 7 and the figures, especially figure 3.

- 2.4 The subject-matter of claim 1 therefore *differs* from this known method in that:
- receiving the non-native software instruction at a device,
- 2.5 The *problem* to be solved by the present invention may therefore be regarded as applying an executing method to a device that do not store the application to execute.
- 2.6 The *solution* proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reason. The feature used to solve the problem is obvious, especially in the context of a mobile device. If the application is not on the device, this application must be transferred to the device either by copying it to its memory through a network, or from a CD-ROM, or by sending it wirelessly in order to be able to execute it.
- 2.7 Dependent claims 2-16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:
- the subject-matter of claims 2, 3, 8, 9, 10, 13, 14, 15 and 16 are disclosed in document D1, see the corresponding passages in the search report.
 - concerning claims 4, 5, 6, 7 and 11 the same reasoning as for claim 1 applies. Their subject-matter is only related to conditions of use of the method disclosed in document D1.
 - concerning claim 12, a slight constructional change in the method of claim 1 is defined which comes within the scope of the customary practice followed by persons skilled in the art, namely using compiler options to optimise the produced code, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of claim 12 also lacks an inventive step.
- 3.1 The same corresponding reasoning applies, *mutatis mutandis*, to the subject-

matter of the corresponding claims 17-30, which therefore are also considered not inventive.

Re Item VII.

- 4.1 The description is not in conformity with the claims as required by Rule 5.1 (a)(iii) PCT.
- 4.2 The description is incomplete, the disclosure of the invention as claimed is missing. It must be added to the description.

Re Item VIII.

- 5.1 The application does not meet the requirements of Article 6 PCT, because claim 15 and 16 are not clear.
- 5.2 Claim 15 is also not clear, It says "measuring the first native software instruction resulting in a first number of bytes". First it should read "measuring the size of the first native software instruction resulting in a first number of bytes", which applies also to claim 16. The applicant should correct this.